

What is Claimed Is:

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1. An aluminum alloy brazing sheet material comprising a core alloy and a clad brazing alloy, wherein said core alloy comprises in weight percent based on the weight of the core alloy:

Si < 0.2 %

Fe < 0.2 %

Mn: 1.3 - 1.7 %

Mg: 0.4 - 0.8 %

Cu: 0.3 - 0.7 %

Ti < 0.2 %

and at least one element selected from the group consisting of Cr, Sc, V, Zr, Hf, and Ni,
and

balance aluminum and unavoidable impurities.

2. An aluminum alloy brazing sheet material according to claim 1, wherein at least two elements selected from the group consisting of Cr, Sc, V, Zr, Hf, and Ni, are included.

3. An aluminum alloy brazing sheet material as claimed in claim 1, wherein Sc is included and is present in an amount from 0.08 to 0.15 % .

4. An aluminum alloy brazing sheet material as claimed in claim 1, wherein V is included and is present in an amount from 0.08-0.15 %.

5. An aluminum alloy brazing sheet material as claimed in claim 1, wherein Zr is included and is present in an amount from 0.08-0.15 %.

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Al
and

6. An aluminum alloy brazing sheet material as claimed in claim 1, wherein Ni is included and is present in an amount from 0.3 to 0.65 %.

7. An aluminum alloy brazing sheet material as claimed in claim 1, that is capable of being used at temperatures of up to at least 325°C.

8. A method for increasing the yield strength of an aluminum alloy brazing sheet material comprising at least a core alloy and a clad alloy, wherein the method comprises:

subjecting said brazing sheet material to a brazing cycle, to form an as-brazed sheet material, and

subjecting the as-brazed sheet material to aging at its peak-aged temperature,

wherein said core alloy comprises in percent by weight based on the weight of the core alloy:

Si < 0.2 %

Fe < 0.2 %

Mn: 1.3 – 1.7 %

Mg: 0.4 - 0.8 %

Cu: 0.3 – 0.7 %

Ti < 0.1 %,

at least one element from the group consisting of Cr, Sc, V, Zr, Hf and Ni, and

balance Al and unavoidable impurities.

9. A method according to claim 8, wherein Ni is present in the core alloy in an amount from 0.3 to 0.65 weight %.

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cont
10. A charge air cooler prepared from an aluminum alloy brazing sheet material as claimed in claim 1.
11. An aluminum alloy brazing sheet material according to claim 1, which exhibits a yield strength > 90 MPa at 175°C , when in an as-brazed temper.
12. An aluminum alloy brazing sheet material according to claim 11, which exhibits a yield strength > 110 MPa, at 175°C , when in a post-braze, peak-aged temper.
13. An aluminum alloy brazing sheet material according to claim 1, which exhibits a yield strength > 88 MPa at 225°C , when in an as-brazed temper.
14. An aluminum alloy brazing sheet material according to claim 1, which exhibits a yield strength > 100 MPa at 225°C , when in the post-braze-peak-aged temper.
15. An aluminum alloy brazing sheet material according to claim 1, that exhibits a yield strength in the peak aged temper that is up to 20% higher than in the as-brazed temper at 225°C .
16. An aluminum brazing sheet material as claimed in claim 1, wherein, when said at least one element is Cr, Sc, V, Zr, or Hf, said element is present in an amount from 0.05 - 0.2 %, and when said at least one element is Ni, said element is present in an amount from 0.20 - 1.0 %.
17. A method according to claim 8, wherein when said at least one element is Cr, Sc, V, Zr, or Hf, said element is present in an amount from 0.05 - 0.20 % and, when said at least one element is Ni, said element is present in an amount from 0.20 - 1.0 %.
18. A method according to claim 8, wherein said method renders said brazing sheet material suitable for use in the manufacture of a charge air cooler.
19. An aluminum alloy brazing sheet material according to claim 1, which exhibits a yield strength in the peak aged temper that is about 17% higher than in the as-brazed temper at 175°C and about 13% higher at 225°C .